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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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DUKE. W. YEE YEE & ASSOCIATES, P.C. P.O. BOX 802333 DALLAS, TX 75380			LE, MIRANDA	
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			2167	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/737,213	Applicant(s) DOUGLIS ET AL.	
	Examiner Miranda Le	Art Unit 2167	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-36 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|----------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>05/07/04, 04/09/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Information Disclosure Statement

1. Applicants' Information Disclosure Statement, filed 16 December 2003, has been received, entered into the record, and considered. See attached form PTO-1449.

Claim Rejections - 35 USC § 101

2. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-36 are rejected under 35 U.S.C. § 101 because the claimed invention is directed to non-statutory subject matter.

(a) Claim 1 defines non-statutory processes because as a whole, they merely present an abstract idea without any practical application that produces a useful, concrete and tangible result.

The claimed process, "dividing an object...; identifying similar blocks...; differentially compressing..." manipulates abstract ideas to result in an abstract construct (no tangible result), and fails to adequately reflect the described practical utility (no useful result).

(b) Claim 18 is the apparatus performs the method of claim 1, has the same type of issues as (a), therefore, is rejected under similar rationale. In addition, each of the means is reasonably interpreted in view of the specification as just software, the claimed system is not limited to embodiments which includes the hardware necessary to enable any underlying functionality to be realized, instead being software per se.

(c) Claim 34 has the same issues as (a) therefore, is rejected under similar rationale. Plus, the claims fail to fall within a category of patentable subject matter set forth in 35 U.S.C. 101. The specification, page 16, lines 7-18, defines “computer-readable medium” as including both storage media (i.e., memory) and communication media (i.e., wave, signal). A computer-readable medium including a carrier wave, or signal, is non-statutory subject matter as set forth in MPEP 2106 (IV)(B)(2)(a). As such, claim 34 is not limited to tangible embodiments, the claim is not limited to statutory subject matter and is therefore non-statutory.

Claims 2-17, 19-33, 35-36 are dependent upon claims 1, 18, 34, respectively, suffer from deficiencies similar to their respective base claims, and therefore are likewise rejected.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-3, 5, 6, 10, 15, 16, 18-20, 27, 32, 34 are rejected under 35 U.S.C. 102(b) as being anticipated by Trout et al. (US Patent No. 6,301,394).

Trout anticipated independent claims 1, 18, 34 by the following:

As to claims 1, 18, 34, Trout teaches a method, in a data processing system, for reducing the size of an object, the method comprising:

dividing an object (i.e. data packets 70, col. 4, lines 55-58, Figs. 3A-3B) into a plurality of blocks (i.e. blocks 76-84, col. 4, lines 55-58, Figs. 3A-3B) (col. 4, line 46-64);

identifying similar blocks (i.e. analyzed to identify relationships between multiple data elements in the received data, col. 4, lines 11-14; the fourth word of each block in a particular data packet 70 is almost zero, col. 4, lines 55-64) within the plurality of blocks (col. 4, line 55 to col. 5, lines 33); and

differentially compressing (such as differential compression, col. 5, lines 11-17) the similar blocks to form a reduced object (col. 4, line 65 to col. 5, lines 33).

As to claims 2, 19, Trout teaches the plurality of blocks are fixed in size (i.e. six words in length, col. 4, lines 46-54).

As to claims 3, 20, Trout teaches the plurality of blocks are variable in size and determined based on characteristics of content of the object (i.e. Header 72 and checksum 74 are one word in length and each block 76-84 is six words in length, col. 4, lines 46-54).

As per claim 5, Trout teaches performing data compression on at least one block within the plurality of blocks that is not differentially compressed or suppressed (i.e. alternate embodiments of the invention may perform any number of data compression procedures using various types of data compression procedures in various sequences, col. 4, lines 39-44) (col. 5, lines 18-33).

As per claim 6, Trout teaches performing data compression on at least one block within the plurality of blocks that is not differentially compressed (i.e. alternate embodiments of the

invention may perform any number of data compression procedures using various types of data compression procedures in various sequences, col. 4, lines 39-44) (col. 5, lines 18-33).

As to claims 10, 27, Trout teaches identifying similar blocks includes identifying one or more features of the plurality of blocks (the fourth word of each block in a particular data packet 70 is almost zero, col. 4, lines 55-64).

As per claim 15, Trout teaches identifying similar blocks includes: using heuristics to identify similar blocks (i.e. a collection of data (or anticipated data) is analyzed to identify relationships between multiple data elements in the collection of data. This analysis may be performed based on the known data format of the data that will be received, the expected data that will be received, or previous data received from a similar data source, col. 3, line 65 to col. 4, line 14).

As to claims 16, 32, Trout teaches the reduced object is stored in a storage unit (col. 4, lines 29-38).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 11, 28 rejected under 35 U.S.C. 103(a) as being unpatentable over Trout et al. (US Patent No. 6,301,394), in view of Bentley et al. (US Patent No. 6,611,213).

As to claims 11, 28, Trout does not expressly teach identifying one or more features includes calculating one or more fingerprints for the plurality of blocks.

Bentley teaches identifying one or more features includes calculating one or more fingerprints for the plurality of blocks (i.e. several blocks match the current fingerprint, col. 8, lines 1-18).

It would have been obvious to one of ordinary skill of the art having the teaching of Trout and Bentley at the time the invention was made to modify the system of Trout to include identifying one or more features includes calculating one or more fingerprints for the plurality of blocks as taught by Bentley. One of ordinary skill in the art would be motivated to make this combination in order to encode the largest match blocks in view of Bentley, as doing so would give the added benefit of improving the capacity and use of such data storage and communications systems as taught by Bentley (col. 1, lines 1-9).

7. Claims 12, 29 rejected under 35 U.S.C. 103(a) as being unpatentable over Trout et al. (US Patent No. 6,301,394), in view of Bentley et al. (US Patent No. 6,611,213), and further in view of Burrows et al. (US Patent No. 6,745,194).

As to claims 12, 29, Trout and Bentley do not expressly teach calculating super fingerprints for the one or more fingerprints; and comparing super fingerprints of the plurality of blocks to determine common features.

However, Burrows teaches calculating super fingerprints for the one or more fingerprints; and comparing super fingerprints of the plurality of blocks to determine common features (i.e. The FINGERPRINT 255 represents the entire content of the page. The fingerprint 255 can be produced by applying one-way polynomial functions to the digitized content, col. 8, lines 27-34).

It would have been obvious to one of ordinary skill of the art having the teaching of Trout, Bentley and Burrows at the time the invention was made to modify the system of Trout to include calculating super fingerprints for the one or more fingerprints; and comparing super fingerprints of the plurality of blocks to determine common features as taught by Burrows. One of ordinary skill in the art would be motivated to make this combination in order to eliminate to ensure that duplicate pages having identical content have identical fingerprints in view of Burrows, as doing so would give the added benefit of minimizing the likelihood that duplicate pages are indexed as taught by Burrows (col. 1, lines 39-48).

8. Claims 4, 13, 14, 21, 22, 23, 30, 31, 35, 36 rejected under 35 U.S.C. 103(a) as being unpatentable over Trout et al. (US Patent No. 6,301,394), in view of Krapp et al. (US Patent No. 6,889,297).

As to claims 4, 21, 35, Trout does not expressly teach identifying identical blocks within the plurality of blocks; and suppressing the identical blocks without differential compression.

Krapp teaches identifying a reference block that matches a greatest number of features of remaining similar blocks (i.e. When the received data block is identified, it can for example be deleted or be replaced with a reference to the already existing data block, col. 2, lines 27-43).

It would have been obvious to one of ordinary skill of the art having the teaching of Trout and Krapp at the time the invention was made to modify the system of Trout to include identifying a reference block that matches a greatest number of features of remaining similar blocks as taught by Krapp. One of ordinary skill in the art would be motivated to make this combination in order to eliminate the first data block identifier that is indicated as being is redundant in view of Krapp, as doing so would give the added benefit of saving memory space, as taught by Krapp (col. 2, line 43).

As to claims 13, 30, Trout does not expressly teach determining whether blocks have a specified number of matching features.

Krapp teaches determining whether blocks have a specified number of matching features (i.e. a second data block identifier matching the first data block identifier exists, Abstract).

It would have been obvious to one of ordinary skill of the art having the teaching of Trout and Krapp at the time the invention was made to modify the system of Trout to include determining whether blocks have a specified number of matching features as taught by Krapp. One of ordinary skill in the art would be motivated to make this combination in order to eliminate the first data block identifier that is indicated as being is redundant in view of Krapp, as doing so would give the added benefit of saving memory space as taught by Krapp (col. 2, line 43).

As to claims 14, 31, Trout does not expressly teach identifying a reference block that matches a greatest number of features of remaining similar blocks.

Krapp teaches identifying a reference block that matches a greatest number of features of remaining similar blocks (i.e. When it is determined that the second data block identifier matching the first data block identifier exists, the first data block identifier is indicated as being is redundant, Abstract).

It would have been obvious to one of ordinary skill of the art having the teaching of Trout and Krapp at the time the invention was made to modify the system of Trout to include identifying a reference block that matches a greatest number of features of remaining similar blocks as taught by Krapp. One of ordinary skill in the art would be motivated to make this combination in order to eliminate the first data block identifier that is indicated as being is redundant in view of Krapp, as doing so would give the added benefit of saving memory space as taught by Krapp (col. 2, line 43).

As to claims 22, 36, Trout teaches performing data compression on at least one block within the plurality of blocks that is not differentially compressed or suppressed (i.e. alternate embodiments of the invention may perform any number of data compression procedures using various types of data compression procedures in various sequences, col. 4, lines 39-44) (col. 5, lines 18-33).

As per claim 23, Trout teaches means for performing data compression on at least one block within the plurality of blocks that is not differentially compressed (i.e. alternate

embodiments of the invention may perform any number of data compression procedures using various types of data compression procedures in various sequences, col. 4, lines 39-44) (col. 5, lines 18-33).

9. Claims 24-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Trout et al. (US Patent No. 6,301,394), in view of Krapp et al. (US Patent No. 6,889,297), and further in view of Gu et al. (US Patent No. 6,925,467)

As per claim 24, Trout teaches means for compressing the object to form a compressed object (i.e. to generate a compressed data set, Abstract).

means for using the compressed object (i.e. the procedure compresses the first compressed data set, col. 4, lines 29-30)

Trout and Krapp do not expressly teach mean for comparing an effectiveness of the compressed object with an effectiveness of the reduced object; and means for using the compressed object if the effectiveness of the compressed object is greater than the effectiveness of the reduced object.

However, Gu teaches means for comparing an effectiveness of the compressed object with an effectiveness of the reduced object (i.e. If the stream size is small, usually less than several kilobytes, the optimal edit distance can generally be calculated in a reasonable amount of time. However, if the stream size is not less than thousands of bytes, the time required for the Hirschberg algorithm to compute the optimal edit distance is so long (hours, days, and sometime months) as to make it impractical, col. 8, lines 1-16); and

means for using the compressed object if the effectiveness of the compressed object is greater than the effectiveness of the reduced object (i.e. to further increase the efficiency of delta file transfer to another system. For example, compression may be used to further reduce the size of the delta file for transmission, col. 18, lines 49-61).

It would have been obvious to one of ordinary skill of the art having the teaching of Trout, Krapp and Gu at the time the invention was made to modify the system of Trout to include mean for comparing an effectiveness of the compressed object with an effectiveness of the reduced object; and means for using the compressed object if the effectiveness of the compressed object is greater than the effectiveness of the reduced object as taught by Gu. One of ordinary skill in the art would be motivated to make this combination in order to further reduce the size of the delta file for transmission in view of Gu, as doing so would give the added benefit of increasing the efficiency of delta file transfer to another system as taught by Gu (col. 18, lines 49-61).

As per claim 25, Gu teaches effectiveness is measured by one of speed of execution and object size (i.e. If the stream size is small, usually less than several kilobytes, the optimal edit distance can generally be calculated in a reasonable amount of time, col. 8, lines 1-16).

As per claim 26, Trout teaches means for using the reduced object if the effectiveness of the compressed object is less than the effectiveness of the reduced object (i.e. such as differential compression, col. 5, lines 11-17).

10. Claims 7-9, 17, 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Trout et al. (US Patent No. 6,301,394), in view of Gu et al. (US Patent No. 6,925,467).

As per claim 7, Trout teaches compressing the object to form a compressed object (i.e. to generate a compressed data set, Abstract).

using the compressed object (i.e. the procedure compresses the first compressed data set, col. 4, lines 29-30)

Trout does not expressly teach comparing an effectiveness of the compressed object with an effectiveness of the reduced object; and

using the compressed object if the effectiveness of the compressed object is greater than the effectiveness of the reduced object.

However, Gu teaches comparing an effectiveness of the compressed object with an effectiveness of the reduced object (i.e. If the stream size is small, usually less than several kilobytes, the optimal edit distance can generally be calculated in a reasonable amount of time. However, if the stream size is not less than thousands of bytes, the time required for the Hirschberg algorithm to compute the optimal edit distance is so long (hours, days, and sometime months) as to make it impractical, col. 8, lines 1-16); and

Gu teaches using the compressed object if the effectiveness of the compressed object is greater than the effectiveness of the reduced object (i.e. to further increase the efficiency of delta file transfer to another system. For example, compression may be used to further reduce the size of the delta file for transmission, col. 18, lines 49-61).

It would have been obvious to one of ordinary skill of the art having the teaching of Trout and Gu at the time the invention was made to modify the system of Trout to include comparing

an effectiveness of the compressed object with an effectiveness of the reduced object; and using the compressed object if the effectiveness of the compressed object is greater than the effectiveness of the reduced object as taught by Gu. One of ordinary skill in the art would be motivated to make this combination in order to further reduce the size of the delta file for transmission in view of Gu, as doing so would give the added benefit of increasing the efficiency of delta file transfer to another system as taught by Gu (col. 18, lines 49-61).

As per claim 8, Gu teaches effectiveness is measured by one of speed of execution and object size (i.e. If the stream size is small, usually less than several kilobytes, the optimal edit distance can generally be calculated in a reasonable amount of time, col. 8, lines 1-16).

As per claim 9, Trout teaches using the reduced object if the effectiveness of the compressed object is less than the effectiveness of the reduced object (i.e. such as differential compression, col. 5, lines 11-17).

As to claims 17, 33, Trout does not expressly teach the reduced object is transmitted over a network.

However, Gu teaches the reduced object is transmitted over a network (i.e. The communication path 106 includes any medium by which files are communicated or transferred between the computer systems 102 and 104, col. 3, lines 21-39).

It would have been obvious to one of ordinary skill of the art having the teaching of Trout and Gu at the time the invention was made to modify the system of Trout to include the reduced object is transmitted over a network as taught by Gu.

One of ordinary skill in the art would be motivated to make this combination in order to reduce bandwidth and time for the transfer in view of Gu, as doing so would give the added benefit of decreasing the probability that the file transfer will be interrupted and simultaneously reducing transmission errors in the received file as taught by Gu (col. 4, lines 18-39).

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Miranda Le whose telephone number is (571) 272-4112. The examiner can normally be reached on Monday through Friday from 8:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John R. Cottingham, can be reached on (571) 272-7079. The fax number to this Art Unit is 571-273-8300.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-3900.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Miranda Le
June 12, 2006

